

Dec. 6, 1966

J. WILKICH

3,289,880

CONTAINER WITH INTEGRAL OPENER

Filed Sept. 30, 1964

4 Sheets-Sheet 1

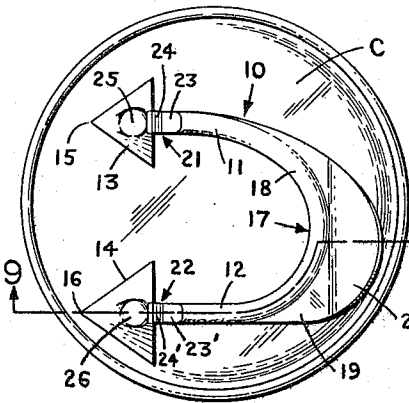


FIG. 3

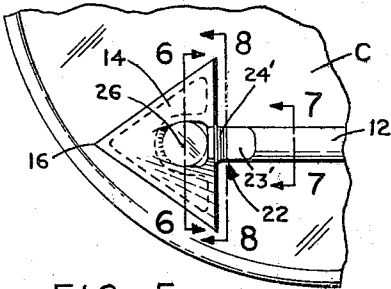


FIG. 5

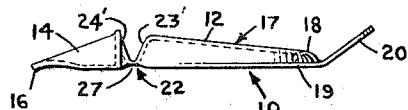


FIG. 2

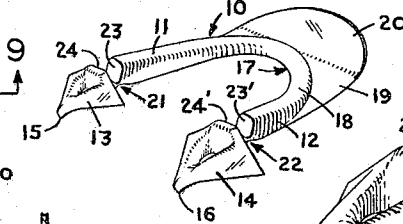


FIG. 1

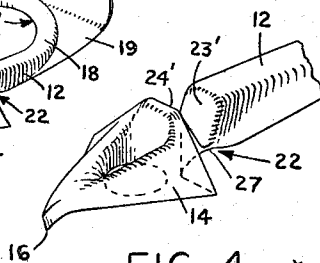


FIG. 4

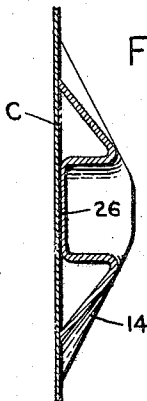


FIG. 6

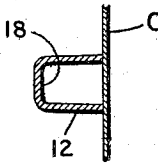


FIG. 7

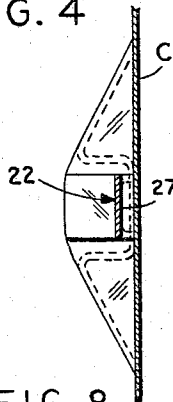


FIG. 8

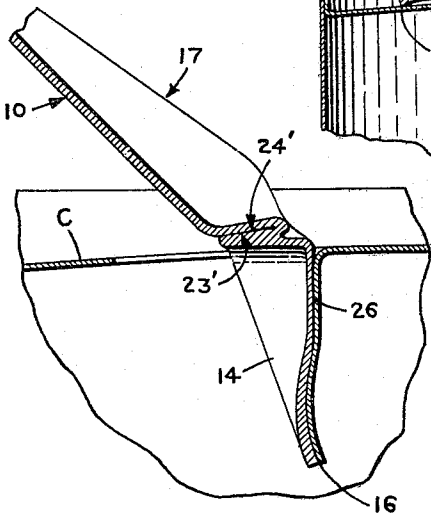


FIG. 10

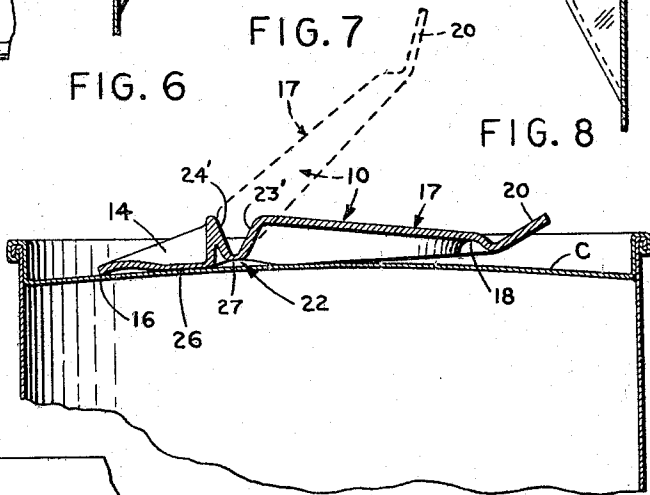


FIG. 9

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4 Sheets-Sheet 2

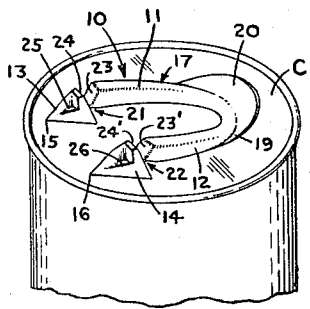


FIG. 11

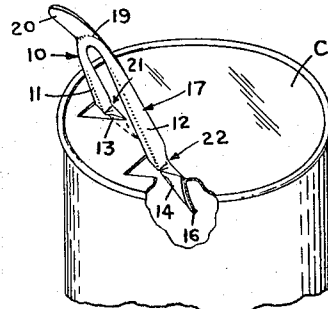


FIG. 12

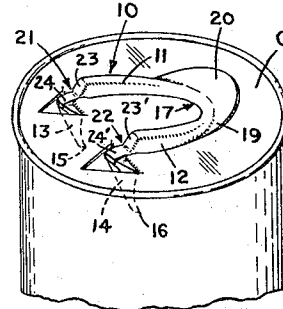


FIG. 13

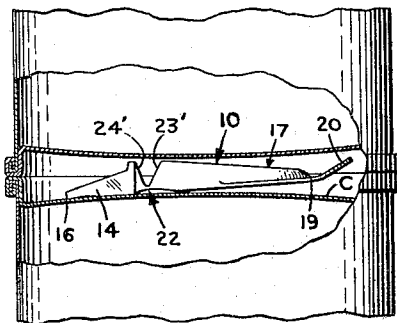


FIG. 14

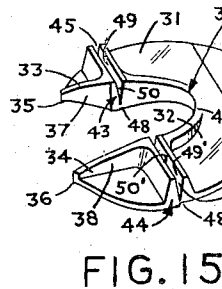


FIG. 15

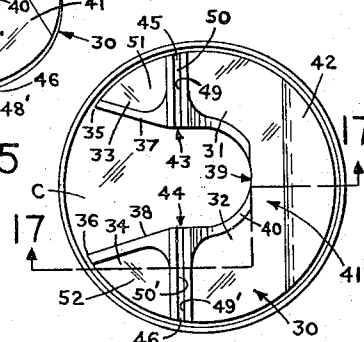


FIG. 16

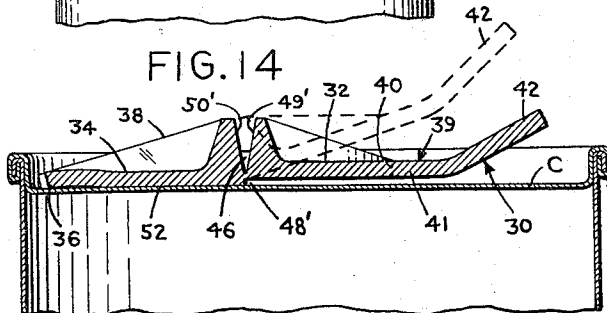


FIG. 17

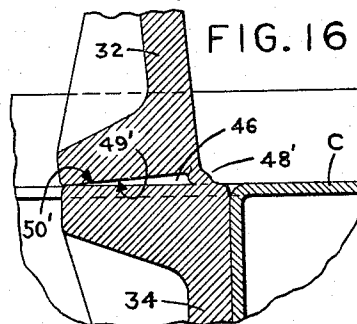


FIG. 18

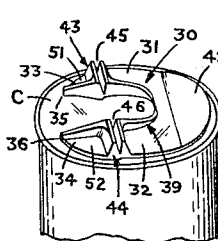


FIG. 19

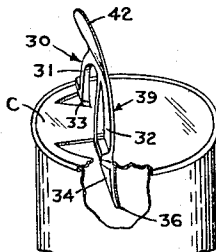


FIG. 20

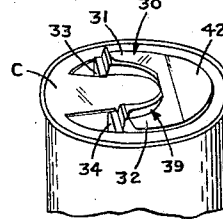


FIG. 21

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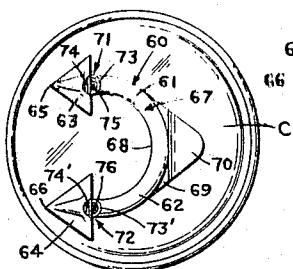


FIG. 26

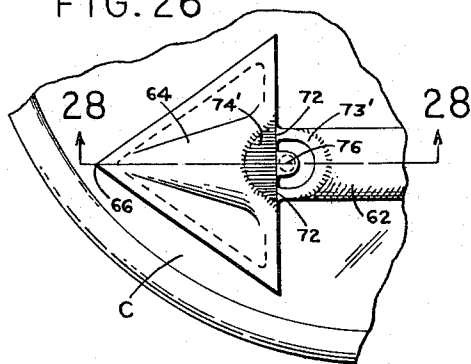


FIG. 27

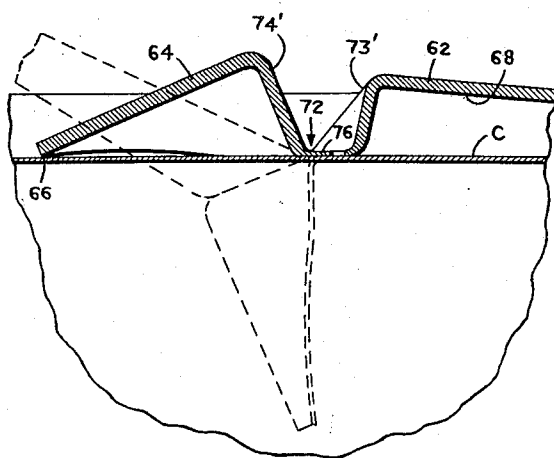


FIG. 28

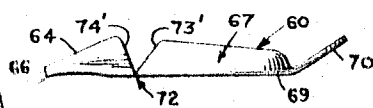


FIG. 23

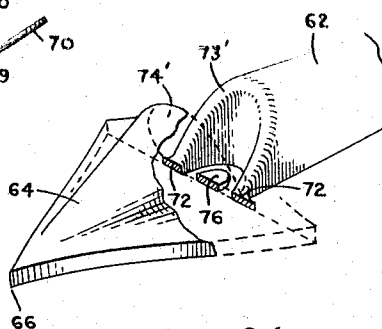


FIG. 24

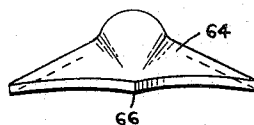


FIG. 25

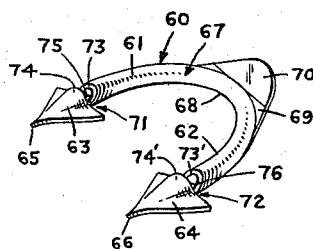


FIG. 22

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4 Sheets-Sheet 4

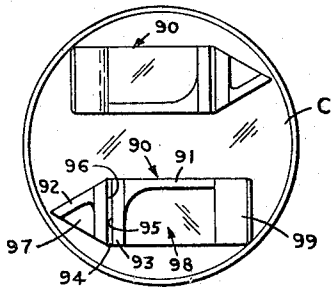


FIG. 35

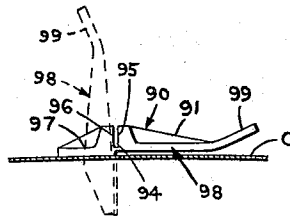


FIG. 36

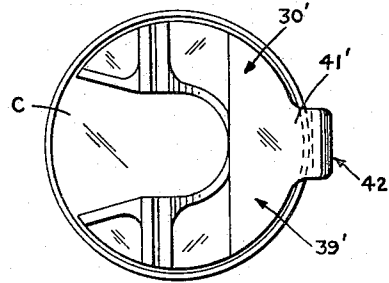


FIG. 31

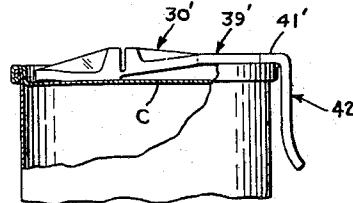


FIG. 32

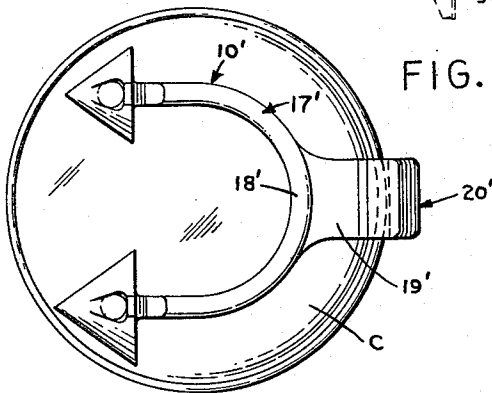


FIG. 29

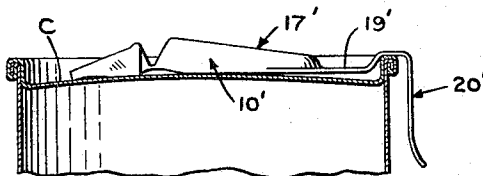


FIG. 30

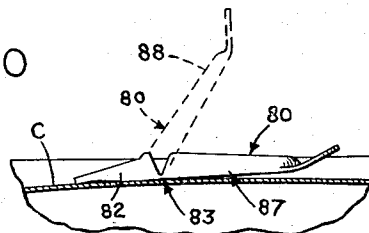


FIG. 34

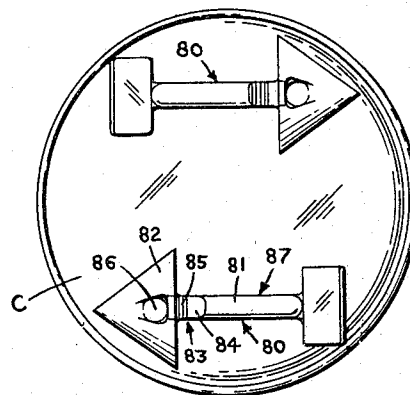


FIG. 33

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CONTAINER WITH INTEGRAL OPENER

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Filed Sept. 30, 1964, Ser. No. 400,448

10 Claims. (Cl. 220-48)

This invention relates generally to the method of opening a container or can, and more particularly to the arrangement of means adapted to be securely affixed to the upper end or side of the container or can such that it can be pivotally moved or rotated so as to puncture the can and thus provide the means for emptying its contents.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown but that they may be widely modified within the invention defined by the claims.

Prior art shows that various types of devices for opening containers or cans have been formed on and affixed to containers so as to be integral therewith. Many of these devices appear to be less desirable and inconvenient for various reasons.

The present invention is so designed as to provide a container with an integral opener such that the opener will function satisfactorily at all times and overcome prior art problems.

The present invention covers a container with an integral opener constructed to permit a moderate force to be exerted in one direction, namely the opening direction, for effectively puncturing holes in the container. This is accomplished by means of establishing a weakened section in the portion of the opener between the elements which do the puncturing and the lever which actuates the puncturing element during the opening operation.

Accordingly, it is an object of the present invention to provide a container with a relatively simple and inexpensive integral part for puncturing the container at one or more points thereon.

It is another object of the present invention to provide a container opener which may be permanently affixed to a portion of a container so as to form a unit of structure therewith and aptly perform the opening operation thereon.

Another object of the invention is to provide uniform and desirable sized openings that are most advantageous in effecting the satisfactory pouring and venting of the container or can.

It is another object of the present invention to provide an opener which is shaped by stamping from sheet material and is easily joined to the container on which it will be used.

These and other objects and advantages of the invention will become apparent to one skilled in the art from the following description of several embodiments of the invention and the novel features will be particularly pointed out hereinafter in the claims.

In the drawings:

FIGURE 1 is a perspective view of a first preferred form of an opener in accordance with the invention.

FIGURE 2 is a side view of the opener shown in FIGURE 1.

FIGURE 3 is a top view showing the first preferred form of an opener attached in position on top of a container.

FIGURE 4 is an enlarged perspective view of a fragmentary portion of the opener shown in FIGURE 1 embodying one of the puncturing elements.

FIGURE 5 is an enlarged top view of a fragmentary portion of the first preferred form of an opener in assembled position embodying one of the puncturing elements.

FIGURE 6 is a section taken on line 6-6 of FIGURE 5.

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FIGURE 7 is a section taken on line 7-7 of FIGURE 5.

FIGURE 8 is a section taken on line 8-8 of FIGURE 5.

FIGURE 9 is an offset vertical section taken on line 9-9 of FIGURE 3 showing in phantomized form the opener moved to puncturing position.

FIGURE 10 is an enlarged fragmentary portion in vertical section of one of the puncturing elements showing the fully intended puncturing position in the associated can to which it is connected.

FIGURE 11 is a partial perspective view of the opener and can shown in FIGURE 3 before the opener has been operated to puncture the top of the can.

FIGURE 12 is a partial perspective view of the opener and can shown in FIGURE 11 after the opener has been operated to puncture the top of the can.

FIGURE 13 is a partial perspective view of the opener and can shown in FIGURE 12 showing the lever portion of the opener bent back after puncturing has been effected.

FIGURE 14 is a side view partly in vertical section showing the respective top and bottom portions of two containers stacked together with an opener in assembled position on the top of the lower container.

FIGURE 15 is a perspective view of a second form of an opener in accordance with the invention.

FIGURE 16 is a top view showing the second form of an opener attached to position on the top of a container.

FIGURE 17 is an offset vertical section taken on line 17-17 of FIGURE 16 showing in phantomized form the second opener moved to puncturing position.

FIGURE 18 is an enlarged fragmentary portion in vertical section of the second opener shown in puncturing position.

FIGURE 19 is a partial perspective view of the opener and can shown in FIGURE 16 before the opener has been operated to puncture the top of the can.

FIGURE 20 is a partial perspective view of the opener and can shown in FIGURE 19 after the opener has been operated to puncture the top of the can.

FIGURE 21 is a partial perspective view of the opener and can shown in FIGURE 20 showing the lever portion of the opener bent after puncturing has been effected.

FIGURE 22 is a perspective view of a third form of an opener in accordance with the invention.

FIGURE 23 is a side view of the opener shown in FIGURE 22.

FIGURE 24 is an enlarged perspective view of a fragmentary portion of the opener shown in FIGURE 22 embodying one of the puncturing elements.

FIGURE 25 is a front view of one of the puncturing elements of the opener shown in FIGURE 22.

FIGURE 26 is a top view of the third form of an opener attached in position on the top of a container.

FIGURE 27 is an enlarged top view of a fragmentary portion of the third form of an opener in assembled position embodying one of the puncturing elements.

FIGURE 28 is a section taken on line 28-28 of FIGURE 27 showing in phantomized form the opener moved to puncturing position.

FIGURE 29 shows a top view of a modified form of an opener in accordance with the invention in assembled position on the top of a can.

FIGURE 30 shows a side view of the form of opener shown in FIGURE 29 with the associated can in vertical section.

FIGURE 31 shows a top view of another modified form of an opener in accordance with the invention in assembled position on the top of a can.

FIGURE 32 shows a side view of the form of opener shown in FIGURE 31 with the associated can broken away and shown in partial vertical section.

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FIGURE 33 is a top view of a form of the invention having spaced single puncturing openers.

FIGURE 34 is a side view of the single-hole puncturing opener shown in FIGURE 33 and showing the fully punctured position in phantomized form.

FIGURE 35 is a top view of another form of the invention having spaced single-hole puncturing openers.

FIGURE 36 is a side view of the single puncturing opener shown in FIGURE 35 and showing the fully punctured position in phantomized form.

While the drawings represent various forms of the invention, its basic character whether in the multi-hole puncturing form as shown in FIGURES 1, 15 and 22, the multi-hole puncturing forms modified in FIGURES 29 and 31 or the single-hole puncturing forms as shown in FIGURES 33 and 35 is characterized by the fact that the opener is affixed to the can and constructed to permit the operating handle to actuate the puncturing portion of the opener and to be returned to assembled position.

Further, while the forms of the invention illustrated are dominated by the multi-hole puncturing forms it is believed clear that the single-hole puncturing form of opener has equal application and may be applied to the can in single or plural fashion as may be desired.

It will also be understood by those skilled in the art, that while the opener is illustrated as affixed to a conventional metal can, it is within the scope of the present invention to utilize the opener on other containers for example, plastic or paper containers to which the opener can be affixed as by an epoxy resin or the like type of cement and in any case whether the container holds liquids, crystals, powders, etc., it is immaterial as the opener is applicable equally to nearly all substances and fluids.

It will also be understood by those skilled in the art that while the opener of the present invention is illustrated as affixed to the top of the container, it is only for illustration and that the opener could be affixed to the sides or bottom of the container or likewise, the container could be adapted for attachment at the top, sides or bottom as by a shaped indentation to receive the opener.

In the description that follows the multi-hole puncturing forms of the invention will first be described other than the modified forms of the multi-hole puncturing form and the single-hole puncturing forms.

FIGURE 1 form of the invention

Referring to FIGURES 1 to 14, this multi-hole puncturing form of the invention consists of a U-shaped opener 10 preferably struck or formed from a suitable piece of sheet metal which is relatively light and simple but effective for the desired puncturing operation to be effected because of the channels and the bends which are formed in the metal to strengthen the opener.

The legs 11 and 12 of the U-shaped opener 10 each have a puncturing element as at 13 and 14 which are generally triangular in shape to provide sharp pointed ends 15 and 16 which ends are operatively associated with the other points of the triangle to give a claw-like appearance as indicated clearly at FIGURES 1 to 3 of the drawings, the sharpened condition of the puncturing elements 13 and 14 being desired to facilitate the puncturing operation of the container to which the opener 10 is affixed as hereinafter described.

At least two puncturing elements are provided because one punctures a pouring opening and the other a venting opening as is illustrated in FIGURES 12 and 13 of the drawings and it will also be noted that the puncturing element 13 is smaller than the puncturing element 14 so that the openings of different size will be made during the puncturing operation, the larger opening serving as a pouring opening and the smaller as the venting opening.

It is of course understood that the puncturing means could be the same size and that this is clear within the scope of the present invention.

The portion of the U-shaped opener connecting the

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legs forms an actuating or operating handle 17 which includes the hollowed portion 18 and a wide flat lifting tab 19 offset slightly at the end remote from the puncturing means as indicated by the ligted portion 20 so that in assembled position the fingers or other operating device can be easily inserted between the outer edge of the tab 19 and the surface of the container to which the opener is affixed.

At a point along each of the legs 11 and 12 between the puncturing elements 13 and 14 and the operating handle 17 weakened or grooved portions 21 and 22 are formed as is clearly shown in FIGURES 1 to 14 of the drawings.

The weakened portions 21 and 22 must first be constructed barely sufficiently thin yet strong enough to permit the necessary leverage to be exerted by the operating handle 17 to effect puncturing of the surface of the container to which the opener 10 is affixed, and still further to be capable of permitting the operating handle to be removed or bent back to a position which will not interfere with the pouring operation from the container.

In this form of the invention, illustrated in FIGURES 1 to 14, the weakened portions 21 and 22 are struck so that angled surfaces 23, 23', 24 and 24' are formed which co-act when the operating handle 17 is raised during the puncturing operation. These angled surfaces operate to increase the effective leverage obtained after the operating handle 17 is raised to bring them into contact and effectively aid in puncturing the container surface to which the opener is attached.

FIGURES 3, 5, 11, 12 and 13 show the opener above described in assembled position on the top of a container generally designated C of the conventional type used for beer or soda and other liquids.

As can be readily seen in FIGURES 3 and 5, the opener 10 is attached to container C by affixing the respective puncturing elements as by welding at points 25 and 26 fairly close or adjacent to the weakened portions 21 and 22 and on the side of the opener remote from the operating handle 17. Small transverse indentations 27 as shown in FIGURE 8 of the drawings are formed on the under side of the weakened portions 21 and 22 to act as the limit boundaries during the welding of the opener to the container surface.

In assembled position as shown in FIGURES 3 and 9 of the drawings, the operating handle 17 can be lifted or pivoted so as to puncture the top portion of the can as is now more fully described.

Operation of FIGURE 1 form of the invention

The operation of the device is indicated clearly in FIGURES 9, 10, 11, 12 and 13.

In FIGURES 9, 11, and 14, the opener is shown in an integrated position on the container before it has been placed into a puncturing operation with surface of the container.

When it is desired to open the container either the thumb or finger or some suitable tool may be inserted under the lifted portion 20 of the operating handle 17 to exert pressure on the operating handle lifted slightly away from the surface of the container.

As the operating handle 17 is moved away from the container surface, it will move the angle surfaces 23 and 23' on one side of the weakened portions 21 and 22 into abutment with the angle surfaces 24 and 24' on the opposite side of the weakened portions as is clearly shown in FIGURE 9 of the drawings. Since in this position, the operating handle 17 is sufficiently clear of the container top or side of which it is connected and further pressure can now be easily exerted and the abutting relationship of the angled surfaces gives the necessary strength to permit the exertion of a moderate amount of force for making a clear, clean puncture of the container as illustrated in FIGURES 10, 12 and 13 of the drawings.

FIGURES 9 and 10 illustrate the non-puncturing posi-

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tion and the puncturing position where the puncturing has been completed with the phantomized view showing the intermediate position prior to the puncturing operation.

Actual puncturing occurs through the whole sweep of the operating handle as illustrated in FIGURES 11, 12 and 13.

After puncturing, the operating handle 17 is bent back to a position on the container where it will not be in the way when pouring the contents as is clearly shown in FIGURE 13 of the drawings.

FIGURE 15 form of the invention

FIGURES 15-21 show a second type of the multi-hole puncturing form of the invention. This configuration differs from the FIGURE 1 form of the invention in that it shows a different technique for establishing the weakened portion or groove between the operating handle and the puncturing elements.

Thus, the opener shown in FIGURE 15 and generally designated 30 is also U-shaped in form which may be stamped or cast and further machined to form the necessary groove therein to provide the weakened portions and the angled operating surfaces as was above described for the FIGURE 1 form of the invention.

The legs 31 and 32 of the U-shaped opener 30 each have a puncturing element as at 33 and 34.

As in the case of the FIGURE 1 form of this invention at least two puncturing elements are provided, one to form a pouring opening and the other to form a venting opening as illustrated in FIGURES 20 and 21.

The puncturing elements will also be of different sizes for these respective operations.

The puncturing elements 33 and 34 are also generally triangular in shape and accordingly are pointed at the ends thereof as indicated at 35 and 36. The inner aspects of the respective puncturing elements is thickened as at 37 and 38 to permit both the sharpening of the puncturing elements and to strengthen the puncturing elements for the puncturing of the surface of the container as is described here and after.

The portion of the U-shaped opener 30 connecting the legs forms an actuating or operating handle generally designated 39 which includes the inner curved portion 40 and a wide flat lifting tab portion 41 which tab portion is raised slightly as at 42 more clearly shown at FIGURE 17 of the drawings. This lifted portion of 42 is remote from the puncturing elements and in assembled position as shown in FIGURE 17 serves to permit the thumb, finger or any other device to be easily inserted between the lifting tab and the surface of the container to which the opener is affixed.

At a point along each of the legs 31 and 32 inwardly of the ends of the puncturing means, there are provided weakened portions generally designated 43 and 44 on each of the legs.

In this form of the invention, the weakened portions are established by developing heavy thickened sections at the points where they are to be formed on the legs so as to permit the thickened portions to be milled or formed by the cutting of grooves on each of the thickened portions at 45 and 46 as clearly shown in FIGURES 15, 16 and 17 to form thin portions 48 and 48' between the puncturing elements and the operating handle of the opener.

The weakened portions 43 and 44 must first be constructed barely sufficiently thin and strong enough to permit the exertion of the necessary leverage by the operating handle 39 to effect puncturing the surface of the container to which the opener 30 is affixed and then capable of permitting the operating handle to be returned to its original position as shown in FIGURE 21 of the drawings.

In order to increase the necessary leverage therefor, the respective grooves 45 and 46 are provided with angled surfaces as at 49, 49', 50 and 50' illustrated in FIGURES

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15, 16, 17 and 18 of the drawings which angled surfaces coact when the operating handle is raised into position for puncturing the container surface to which the opener is attached as is described here and after.

FIGURES 16 and 17 and 19 show the opener 30 above described in an assembled position on the top of a container C.

The opener is affixed to the top of the can by any suitable means such as by a weld at 51 and 52 for the respective puncturing elements at a point fairly close to the weakened portions 43 and 44 remote from the operating handle 39.

The configuration of the opener 30 is thus indicated as being relatively heavy only in the particular portion where the grooved or weakened sections 43 and 44 are formed whereas the remaining portions of the opener are made as thin as possible without interfering with the physical functions which they perform in the puncturing operation as is now described.

Operation of FIGURE 15 form of the invention

FIGURES 17 and 18 and 19 and 20 and 21 show the opener as held in integrated position on the top of the container and the various positions as the handle 39 is raised to force the puncturing elements into punctured position with the container surface.

Thus similar to the FIGURE 1 form of the invention, when it is desired to puncture the surface of a can, either the thumb, finger or a suitable tool may be inserted under the raised portion 42 of the operating handle 39 and pressure can be exerted against the operating handle 39 forcing it slightly away from the surface of the can.

As the operating handle 39 is moved away from the container surface, the angled surfaces 49 and 49' will be brought into contact with the angled surfaces 50 and 50' on the respective sides of the grooves 45 and 46.

This is more clearly shown in the phantomized view of the opener in FIGURES 17 and 18 of the drawings.

As above indicated it is because of this abutting relationship that the operating handle 39 gains sufficient strength to permit the exertion of a moderate amount of force for making a clear, clean, puncture of the surface of the container and FIGURES 17, 18, 19, 20 and 21 illustrate the respective non-puncturing positions and the punctured position when the operation has been completed.

FIGURE 21 shows that after puncturing has been effected that the operating handle 39 can be bent back to the position as shown in FIGURE 21 so it will not interfere with the pouring operation from the openings provided therefor in the can.

FIGURE 22 form of the invention

FIGURES 22-28 show a third type of the multi-hole puncturing form of the invention. This form differs from the forms of the invention shown at FIGURE 1 and FIGURE 15 in two particulars. First it illustrates a more novel form of affixing or welding the opener to the surface of the associated container on which it will operate. Secondly, it shows another means of forming the weakened portion or joint between the puncturing elements and the operating handle.

Thus, similar to the forms of the invention shown in FIGURE 1 and FIGURE 15, the FIGURE 22 is also a U-shaped opener generally designated 60 which can be struck or formed from stock sheet material and machined to the finished operative form.

The legs 61 and 62 of the U-shaped element 60 have puncturing elements as at 63 and 64 which are generally triangular in shape to provide sharp pointed ends 65 and 66 which ends are operatively associated with the other points of the triangle and the puncturing elements 63 and 64 are sharpened to facilitate the puncturing operation of the container to which the opener 60 is affixed as herein-after described.

At least two puncturing elements are provided because

one punctures a pouring opening and the other a venting opening as has been clearly illustrated in the FIGURE 1 and the FIGURE 15 forms of the invention. It will also be noted that the puncturing element 63 as in the prior described forms of the invention is smaller than the puncturing element 64 so that openings of different size will be made during the puncturing operation, the larger opening serving as a pouring opening and the smaller opening as the venting opening.

It is of course understood that the puncturing means could be the same size and that this is within the scope of the present invention.

The portion of the U-shaped opener connecting the legs forms an actuating or operating handle 67 which includes the hollowed inner curved portion 68 and a wide flat lifting tab 69 offset slightly at the end remote from the puncturing elements as indicated by the lifted portion 70 so that in assembled position the thumb, finger or other operating device can be easily inserted between the edge of the tab 69 and the surface of the container to which the opener is affixed.

At a point along each of the legs 61 and 62 between the puncturing elements 63 and 64 and the operating handle 67, weakened or grooved portions 71 and 72 are formed as is clearly shown in FIGURES 22, 23, 24, 26, 27 and 28 of the drawings.

The weakened portions 71 and 72 must first be constructed barely sufficiently strong enough to permit the necessary leverage to be exerted by the operating handle 67 to effect puncturing of the surface of the container to which the opener 60 is affixed, and then capable of permitting the operating handle to be bent back to its original position so as not to interfere with the pouring operation from the container to which the opener is affixed.

In this form of the invention, illustrated in FIGURES 22 to 28, the weakened portions 71 and 72 are cut or struck so that angled surfaces 73, 73', 74 and 74' are formed which coat when the operating handle is raised during the puncturing operation. These angled surfaces operate to increase the effective leverage obtained after the operating handle 60 is raised to bring them into contact and effectively aid the operating handle for puncturing the container surface for which the opener is attached.

FIGURES 26 and 28 show the opener above described in assembled position on the top of a container generally designated C which container is one of the conventional types used for beer or soda and other liquids.

The opener is affixed to the top of the container by welding or other suitable means with tabs 75 and 76 which are formed centrally on the innermost sides of the puncturing elements 63 and 64 remote from points 65 and 66 and having sufficiently strong thicknesses which will permit the exercise of the necessary leverage between the operating handle 67 and the puncturing elements 63 and 64.

However, this construction also permits proper sizing of the weakened sections 71 and 72 as indicated by the depth of the portions forming the angled surfaces 73, 73', 74, and 74' as clearly shown in FIGURE 28.

Operation of FIGURE 22 form of the invention

The operation of the form of the invention is substantially identical to that described above for forms of the invention shown at FIGURE 1 and FIGURE 15.

In FIGURE 26 the opener 60 is shown in an integrated position on the container before it has been placed into puncturing operation with the surface of the container to which it is affixed.

When it is desired to open the container either the thumb, finger or some suitable tool may be inserted under the lifted portion 70 of the operating handle 67 to exert pressure on the operating handle so as to lift it slightly away from the surface of the container.

As the operating handle 67 is moved away from the

container surface, it will move the angle surfaces 73 and 73' on one side of the weakened portions 71 and 72 into abutment with the angle surfaces 74 and 74' on the opposite side of the weakened portions. Since in this position, the operating handle 67 is sufficiently clear of the container top or side to which it is connected further pressure can now be easily exerted and the abutting relationship of the angled surfaces permits the exertion of a reasonable amount of force for making a clear, clean puncture of the container as illustrated in the phantomized view in FIGURE 28 of the drawings.

Actual puncturing occurs through the whole sweep of the operating handle as illustrated in FIGURE 28 with the welding tabs 75 and 76 serving as anchoring points on top of the container.

Modified type of multi-hole puncturing form of the invention

FIGURES 29, 30, 31 and 32 show a modified form of the FIGURE 1 and FIGURE 15 form of the invention in that in place of the raised portion on the lifting tab of the operating handles 17 and 39 respectively, an auxiliary means is provided to facilitate the raising of the operating handles into pre-puncturing position.

Thus, at FIGURES 29 and 30, the form of the invention shown in FIGURE 1 of the drawings is illustrated diagrammatically as including the operating handle 17' having a flat extension 19' remote from the curved hollowed portion 18' of the opener 10'. The flat extension 19' is connected in turn to an L shaped lifting tab 20' which as is clearly shown in FIGURE 30 is molded to fit in snug engagement about the top and side of the container C to which the opener 10' is affixed.

Similarly in FIGURES 31 and 32 illustrating the form of the invention shown at FIGURE 15, the operating handle 39' is provided with a flat extension 41' remote from the curved portion connecting the legs, which flat extension 41' is connected in turn to an L shaped lifting tab 42' also disposed to fit snugly to the top and sides of the surfaces of the container C to which the opener 30' is affixed.

The L shaped lifting tabs 20' and 42' respectively serve to amplify the forces exerted by the operating handle 17' and 39' respectively.

Single hole puncturing forms of the invention

In the drawings as shown at FIGURES 33, 34, 35 and 36 a relatively simple form of the present invention is illustrated as embodying a single elongated member or a plurality of spaced single elongated members each affixed to a container as illustrated in FIGURES 33 and 35 of the drawings.

FIGURE 33 illustrates a simple form or a single legged form of the opener described as in the FIGURE 1 form of the invention and FIGURE 35 is the single legged form of the opener described above as in the FIGURE 15 form of the invention.

In each of these single forms, the puncturing means and the operating handle are held together by a weakened joint or groove and the opener is affixed to the container as in the case of the FIGURE 1 form and FIGURE 15 form of the invention.

In FIGURE 33, the opener 80 includes a single body portion 81 and a puncturing means 82 which is connected thereto by means of a weakened or grooved portion 83 having angled surfaces as at 84 and 85.

The operation handle 87 on the body portion 81 is raised as at 88 to permit easy access for lifting the body member to the prepuncturing position.

Actual puncturing occurs when the operating handle is forced across the top of the container by hand pressure.

In FIGURE 35, the opener 90 includes a single body member 91 and a puncturing means 92 formed integrally with a thickened portion 93 therebetween. The thickened portion is weakened by cutting a groove 94 nearly the full thickness as is clearly shown in FIGURE 36.

The groove 94 will have angle co-acting surfaces as at 95 and 96 to provide the desired leverage.

The opener 90 is affixed to the container as by welding at 97 and the body portion 91 has an operating handle 98 which is raised as at 99 to facilitate the puncturing operation as in the prior forms of the invention described.

Operation is illustrated by the solid and phantomized view in FIGURE 36 which shows the opener 90 in integrated position and in positions after puncturing has been effected.

A plurality of single hole puncturing openers are shown in FIGURES 33 and 35 to illustrate that the pouring and venting openings can be made other than by the multi-hole puncturing forms of the invention illustrated.

While all the puncturing elements shown in FIGURES 3, 16, 26, 29 and 31 are shown located close to the edge of the container, they can also be placed near or on the centerline of the container.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. An opener to be affixed to a container comprising:
 - (a) a lever means having a plurality of legs formed thereon,
 - (b) each of said legs having a puncturing means at the end remote from the lever means,
 - (c) said opener affixed to the container at a point adjacent each puncturing means,
 - (d) means on each leg between each of said puncturing means and the lever means including a pair of co-acting angular surfaces on the side of the point where the opener is affixed to the container remote from the puncturing means to increase the force exerted in one direction by the lever means during operation of the opener,
 - (e) and means operatively associated with said force increasing means to provide a point of weakness whereby said lever means can be bent into operative position and after operation returned to a non-obstructing position relative the punctured opening in the container.
2. An opener to be affixed to a container comprising:
 - (a) a member,
 - (b) means at one end of said member for puncturing the surface of the container,
 - (c) lever means on said member remote from the puncturing means,
 - (d) said member affixed to the container near the puncturing means,
 - (e) means forming a weakened portion on said member disposed between the puncturing means and the lever means and on the side of the point where the member is affixed to the container remote from the puncturing means,
 - (f) said means forming the weakened portion including a pair of co-acting angular surfaces formed intermediate said member,
 - (g) said co-acting angular surfaces to permit the effective exertion of a heavy force in one direction by said lever means during operation of the opener, and
 - (h) and said weakened means to permit said lever means to be moved to a non-obstructing position after the puncturing operation.
3. In the opener as claimed in claim 2 wherein said lever means includes a lifting tab to facilitate raising the lever means to force the angular surfaces into co-acting relationship.
4. An opener to be affixed to a container comprising:
 - (a) a member,
 - (b) means at one end of said member for puncturing the surface of the container,
 - (c) lever means on said member remote from the puncturing means,

- (d) said opener affixed to the container near the puncturing means,
 - (e) a V-shaped groove in said member between the puncturing means and the lever means forming a pair of co-acting angular surfaces on the side of the member remote from the point where the member is affixed to the container to permit the lever means to increase the forces exerted in one direction by the lever means during operation of the opener,
 - (f) and the thin section of the member formed at the apex of the said V-shaped groove acting to permit said lever means to be moved to a non-obstructing position after the container has been punctured.
5. An opener to be affixed to a container comprising:
 - (a) a lever means having a plurality of legs formed thereon,
 - (b) each of said legs having a puncturing means at the end remote from the lever means,
 - (c) said opener affixed to the container at a point adjacent each puncturing means,
 - (d) a V-shaped groove on each of said legs between the puncturing means and the lever means on each respective leg and on the side of the point where the opener is affixed to the container remote from the puncturing means to permit the lever means to increase the forces exerted in one direction during operation of the opener,
 - (e) said V-shaped grooves each forming a pair of co-acting angular surfaces,
 - (f) and means operatively associated with said V-shaped groove in each of said legs including a thin portion between the puncturing portion of the leg and lever means thereof at the apex of the V-shaped groove to provide a point of weakness whereby said lever means can be bent after operation of the opener to a non-obstructing position relative the punctured opening in the container.
 6. An opener to be affixed to a container comprising:
 - (a) a lever means having a plurality of legs formed thereon,
 - (b) each of said legs having a puncturing means at the end remote from the lever means,
 - (c) said opening affixed to the container at a point adjacent each puncturing means,
 - (d) a V-shaped section forming a pair of coacting angular surfaces on each of said legs between the puncturing means and the lever means and on the side of the opener remote from the point affixed to the container to permit said lever means to increase the forces exerted in one direction during operation of the opener,
 - (e) an open throat at the apex of said V-shaped section,
 - (f) tab means in the open throat to provide means for fixing the opener to the container,
 - (g) and means operatively associated with said force increasing means to provide a point of weakness whereby said lever means after operation can be returned to a non-obstructing position relative to the punctured opening in the container.
 7. In the opener as claimed in claim 6 wherein said lever means includes a lifting tab to facilitate raising the lever means until the coacting angular surfaces are in operative contact with each other.
 8. In the opener as claimed in claim 6 wherein the lifting tab comprises an L-shaped arm, said L-shaped arm disposed to extend snugly over the edge of the container.
 9. An opener to be affixed to a container comprising:
 - (a) a lever means having a plurality of legs formed thereon,
 - (b) each of said legs having a puncturing means at the end remote from the lever means,
 - (c) said lever means and said legs formed as an integral member,

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- (d) said opener affixed to the container at a point adjacent each puncturing means,
- (e) a thickened portion intermediate said lever means and each of said respective legs,
- (f) a V-shaped groove in each of said thickened portions each forming a pair of coacting angular surfaces on the side of each of said leg means remote from point where the leg means is affixed to the container to permit said lever means to increase the forces exerted in one direction during operation of the opener,
- (g) and means operatively associated with said force increasing means to provide a point of weakness whereby said lever means can be bent to a non-obstructing position relative the punctured opening in the container after operation.
10. In the opener as claimed in claim 9 wherein each V-shaped groove on said opener forms a weakened section on said opener to facilitate bending of the lever means from operative to non-operative position.

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